

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/SG03/00223

<b>A. CLASSIFICATION OF SUBJECT MATTER</b>												
<p>Int. Cl.?: H01L 21/4763, 21/285, 23/36, 23/367, 23/373, 31/024, 31/052, 31/18, H01S 5/024</p> <p>According to International Patent Classification (IPC) or to both national classification and IPC</p>												
<b>B. FIELDS SEARCHED</b>												
<p>Minimum documentation searched (classification system followed by classification symbols)</p> <p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched</p> <p>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)          file dwpi: limit /ic h01l-021 or h01l-023 or h01l-031 or h01l-033 or h01s-005, gan or (gallium (w) nitride), sapphire or gaas or inp or si, epitax+ or epilayer?, copper or cu, adhesion (w) layer, seed (w) layer, (heat or thermal+) (s) (sink+ or spread+ or conduct+ or dissipat+ or remov+), laser or led? or (light (w) emitting), ohmic (w) contact, active (w) region, thick, electroplat+ or electrodeposit+, lift (w) off, (host or temporary or remov+) (2d) substrate</p>												
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>												
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.										
A	US 6562648 B1 (WONG et al.) 13 May 2003 Column 4, lines 3-17; figures 1a-1g											
A	US 2003/0064535 A1 (KUB et al.) 3 April 2003 Page 2, paragraphs [0032]-[0035]; figures 1(a)-1(d)											
A	US 6448102 B1 (KNEISSL et al.) 10 September 2002 Column 2, lines 5-38; figures 11a-11f											
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C		<input checked="" type="checkbox"/> See patent family annex										
<p>* Special categories of cited documents:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; vertical-align: top;">           "A" document defining the general state of the art which is not considered to be of particular relevance         </td> <td style="width: 30%; vertical-align: top;">           "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention         </td> </tr> <tr> <td style="vertical-align: top;">           "E" earlier application or patent but published on or after the international filing date         </td> <td style="vertical-align: top;">           "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone         </td> </tr> <tr> <td style="vertical-align: top;">           "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)         </td> <td style="vertical-align: top;">           "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art         </td> </tr> <tr> <td style="vertical-align: top;">           "O" document referring to an oral disclosure, use, exhibition or other means         </td> <td style="vertical-align: top;">           "&amp;" document member of the same patent family         </td> </tr> <tr> <td style="vertical-align: top;">           "P" document published prior to the international filing date but later than the priority date claimed         </td> <td></td> </tr> </table>			"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone	"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art	"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family	"P" document published prior to the international filing date but later than the priority date claimed	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention											
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone											
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art											
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family											
"P" document published prior to the international filing date but later than the priority date claimed												
Date of the actual completion of the international search 2 December 2003	Date of mailing of the international search report 09 DEC 2003											
Name and mailing address of the ISA/AU <b>AUSTRALIAN PATENT OFFICE</b> PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized officer <b>RAJEEV DESHMUKH</b> Telephone No : (02) 6283 2145											

**INTERNATIONAL SEARCH REPORT**International application No.  
PCT/SG03/00223

<b>C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
<b>Category*</b>	<b>Citation of document, with indication, where appropriate, of the relevant passages</b>	<b>Relevant to claim No.</b>
A	US 6210479 B1 (BOJARCZUK et al.) 3 April 2001 Column 3, line 18–column 4, line 52; figures 1–6	
A	EP 1326290 A2 (XEROX CORPORATION) 9 July 2003 Abstract; figure 2	
E, A	US 6627921 B2 (WONG et al.) 30 September 2003 Column 4, lines 10–23; figures 1a–1g	

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/SG03/00223**

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report			Patent Family Member			
US	6562648	JP	2002076523	US	2003122141	
US	2003064535					
US	6448102	JP	2000196197	US	6365429	
US	6210479	JP	10270712	JP	2000252224	JP
		US	5946551	US	5981970	US
		US	6344662			6344660
EP	1326290	CA	2414325	JP	2003234542	US
US	6627921	JP	2002076523	US	6562648	US
						2003122141

END OF ANNEX